

REMARKS

The Claims have been amended by amending Claims 1 and 11.
Claims 1-16 are pending in the application.

Both in Claim 1 (part (b)(vi)), and in Claim 11, the alternative recitation of “alcohols” has been deleted.

The initial portion of part (a) of Claim 1 has been amended to refer to “a polymer substrate.” This amendment conforms the initial portion of part (a) with the nomenclature used in part (a)(i). This amendment is intended as a clarification only, and is not intended to change the scope of the Claim.

Part (b)(vii) of Claim 1 has been clarified to refer to “an amide group that is covalently linked ~~links the reactant~~ to the polymer.” This amendment is intended as a clarification only, and is not intended to change the scope of the Claim.

The § 112, Second Paragraph Rejections

The Office entered two grounds of rejection under 35 U.S.C. § 112, second paragraph.

The covalent amide linkage

The Office observed that the language in the prior amendment (Claim 1, part (b)(vii) concerning the amide linkage was ambiguous. It is respectfully submitted that the present amendment removes the ambiguity in a straightforward manner that requires no extended discussion, and that this ground of rejection has now been overcome.

The polymer surface

The Office questioned whether the “polymer surface” referred to the surface of the “polymer substrate.” The answer is yes. It is respectfully submitted that express antecedent basis is not required for the term “polymer surface,” because a polymer substrate inherently possesses a surface.

The Claims would have the same meaning, but would become excessively wordy, if each occurrence of “polymer surface” were hypothetically to be replaced with –surface of the polymer substrate–. It is respectfully submitted that clarity would not be improved by such a change.

Note that the initial portion of part (a) of Claim 1 has been clarified to refer to “a polymer substrate”, thus conforming with the nomenclature used in part (a)(i).

In the field of materials science the term “substrate” is understood to refer to a solid object upon which processing is conducted, for example by adding or modifying one or more layers. For present purposes, it suffices to note merely that a “substrate” is a solid object. A solid object inherently possesses a surface. Express antecedent basis is not generally required for a term that is an inherent component of another, expressly recited element. The Office’s attention is respectfully directed to M.P.E.P. § 2173.05(e), first paragraph (citations omitted):

Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation “the outer surface of said sphere” would not require an antecedent recitation that the sphere has an outer surface.

Just as a sphere inherently has a surface, so too a “polymer substrate” inherently has a surface. There is no ambiguity in calling it simply the “polymer surface,” without further elaboration. It is respectfully submitted that this ground of rejection should be withdrawn.

The § 103 Rejection

Claims 1-2, 4-11, 13 and 14 were rejected under 35 U.S.C. § 103(a) as being obvious over Brandow. Claim 1 is the sole pending independent Claim. If independent Claim 1 is novel and nonobvious, then it logically follows that each of its dependent Claims must necessarily be novel and nonobvious as well. See M.P.E.P. § 2143.03, first paragraph.

Applicants' January 12, 2009 Amendment had distinguished Brandow on the ground that Brandow teaches the reaction of a primary or secondary amine to form an imine, followed by reduction to an amine. By contrast, Claim 1 had been amended to include a conditional limitation: namely, if the reactant is an amine, then there must also be a step of reacting the amine with carboxyl bound to the polymer to produce an amide group.

The May 12, 2009 Office Action expressed no essential disagreement with Applicants' rationale. The Office appears to have implicitly accepted the amide/amine distinction between the claimed inventions and the principal teachings of Brandow.

However, the Office Action pointed to an alternative embodiment suggested by Brandow to reject the Claims under § 103. The Office Action noted that, although Brandow's principal teaching concerned the reaction of a primary or secondary amine, Brandow also suggested an alternative embodiment that used an alcohol in place of the amine. Brandow described reactions with a "QZ structure" in which the Z group was "a functional group which can be attached to the surface," while the Q group was "a group possessing the appropriate combination of physical and chemical properties required for the application." See Brandow, col. 6, lines 10-13, and Brandow's Fig. 2. Brandow's "Z" group could be an amine or an alcohol. See col. 6, lines 14-19. (It is respectfully submitted that the several possibilities for Brandow's "Q" groups are largely irrelevant to the present discussion, since it was only the "Z" group, not the "Q" group, that Brandow attached to the surface.)

Claim 1 has now been amended to remove "alcohols" from the list of possible reactants. Thus, to the extent that Brandow's alternative embodiment might otherwise be construed to suggest the use of an alcohol, the hypothetical result would nevertheless fall outside the scope of amended Claim 1.

It is respectfully submitted that the amendment to Claim 1 distinguishes the claimed invention from the alternative embodiment suggested by Brandow, and thereby overcomes the § 103 rejection.

Conclusion

It is respectfully submitted that all grounds of rejection have been overcome, or should otherwise be withdrawn. Allowance of Claims 1-16 at an early date is respectfully requested.

Respectfully submitted,

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